



DEUTSCHES
PATENTAMT

⑪ Aktenzeichen:	296 03 705.2
②② Anmeldetag:	29. 2. 96
④⑦ Eintragungstag:	25. 4. 96
④③ Bekanntmachung im Patentblatt:	5. 6. 96

DE 296 03 705 U 1

⑦③ Inhaber:
Burger Kunststoff-Spritzgußwerk GmbH, 78048
Villingen-Schwenningen, DE

⑦④ Vertreter:
F. Neymeyer und Kollegen, 78052
Villingen-Schwenningen

⑥④ Handschreibgerät

DE 296 03 705 U 1

29.02.96

B 214

20.02.96

Ne/

Anmelder: Burger Kunststoff-Spritzgußwerk GmbH,
78048 Villingen-Schwenningen

Bezeichnung: Handschreibgerät

Die Erfindung betrifft ein Handschreibgerät mit einem Griffteil, der aus einem im wesentlichen runden, schlanken, von einem weichen Mantel umhüllten, hohlen Griffkern besteht, welcher mit einer Schreibspitze versehen und an einem länglichen hohlen Halterschaft befestigt ist.

Handschreibgeräte wie z. B. Drehbleistifte, Druckbleistifte, Füllfederhalter, Filzschreiber oder Kugelschreiber od. dgl.¹ werden in vielfältigen Formen und Farben hergestellt. Ein gefälliges Design allein genügt jedoch nicht für ein qualitativ hochwertiges Handschreibgerät, denn das Handschreibgerät sollte gut in der Hand liegen und insbesondere bei längerem Schreiben weder zu Ermüdungserscheinungen noch zu Verkrampfungen der Hand und Nervenreizungen führen.

grip into an expanded ergonomic position and for contacting radially for contracting the grip into a contracted storage position; and movable actuation means engaged with the radial expansion means for moving the radial expansion means between the expanded and the contracted positions.

[0016] A further object of the present invention is to provide such an arrangement where the instrument is a writing instrument with propelling means for propelling and repelling a writing tip from and into the active end of the body, the movable actuation means either acting with or separately of the propelling means so that the writing tip can either be propelled with expansion of the grip or propelled separately of any movement of the grip.

[0017] A further object of the present invention is to provide the expansion means in the form of at least three bendable members in the instrument body which are circumferentially spaced inside the grip and which are bent outwardly by the movable actuation means.

[0018] A still further object of the present invention is to provide a variable contour grip arrangement which is simple in design, rugged in construction, and economical to manufacture.

[0019] The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference is made to the accompanying drawings and descriptive matter in which a preferred embodiment of the invention is illustrated.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] In the drawings:

Fig. 1 is an axial sectional view of a hand instrument with variable contour grip arrangement of the present invention;

Fig. 2 is a view similar to Fig. 1 of the instrument with its grip in an expanded ergonomic position;

Fig. 3 is a side elevational view of an instrument of the invention with its writing tip repelled (retracted) and its grip contracted into a storage position;

Fig. 4 is a view similar to Fig. 3 with the writing tip propelled (extended) and the grip in its expanded ergonomic position for use;

Fig. 5 is a perspective view of the instrument of Fig. 4 as it is being held by the hand of a user for an ergonomic grip;

Fig. 6 is an explanatory illustration of one embodiment for the mechanism for varying the contour of the grip of the invention;

Fig. 7 is an axial sectional view of another embodiment of the hand instrument with variable contour grip arrangement of the present invention;

Fig. 8 is a radial sectional view taken along line 8-8

of Fig. 7, showing the grip contour mechanism in its contacted storage position;

Fig. 9, is a view similar to Fig. 8 but in the expanded position for the grip;

Fig. 10 is a view similar to Fig. 7 showing another embodiment of the invention in a grip expanded position; and

Fig. 11 is a view similar to Fig. 10 showing a still further embodiment of the invention in a grip contracted position.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Referring to the drawings in particular, the invention embodied in Fig. 1 comprises a hand instrument 10 with variable grip arrangement 12. The instrument has an instrument body of the type to be held between the fingers of the hand for use as shown in Fig. 5. The body has an active end 14 and an opposite end 16. A resilient material, such as silicone rubber, forms a grip or sleeve 18 around the body near the active end 14.

[0022] Radial expansion means 20 in the body 10 and under the grip 18 expand radially for expanding the grip 18 into an expanded ergonomic position shown in Fig. 2, and for contacting radially for contracting the grip into a contracted storage position shown in Fig. 1. Contraction of the grip occurs automatically due to the resilient nature of the grip material which may be SANEPRENE rubber, a trademark for a synthetic rubber.

[0023] The radial expansion means are moved by movable actuation means 22 engaged with the radial expansion means for moving the radial expansion means between the expanded and the contracted positions.

[0024] In the figures the instrument is a writing instrument with propelling means 24 for propelling and repelling a writing tip 26 from and into the active end 14 of the body 10. The movable actuation means may act with or without the propelling means so that the writing tip is propelled with expansion of the grip or the propelling means and the movable actuation means may act independently so that the writing tip is propelled independently of expansion of the grip. In the embodiment of Figs. 1-10, the actions occur together, in the embodiment of Fig. 11, they are independent.

[0025] The expansion means 28 in Fig. 1, comprises at least three bendable members 28 in the instrument body which are circumferentially spaced inside the grip 18 and which are bent outwardly by the movable actuation means. Only two of the beams are visible in Figs. 1 and 2. Three beams are preferred because they create a triangular expanded position, but more beams can be used for a more cylindrical ergonomic grip.

[0026] The body 10 includes an upper body portion 30 which carries the opposite end 16, and a lower body

Fig. 1

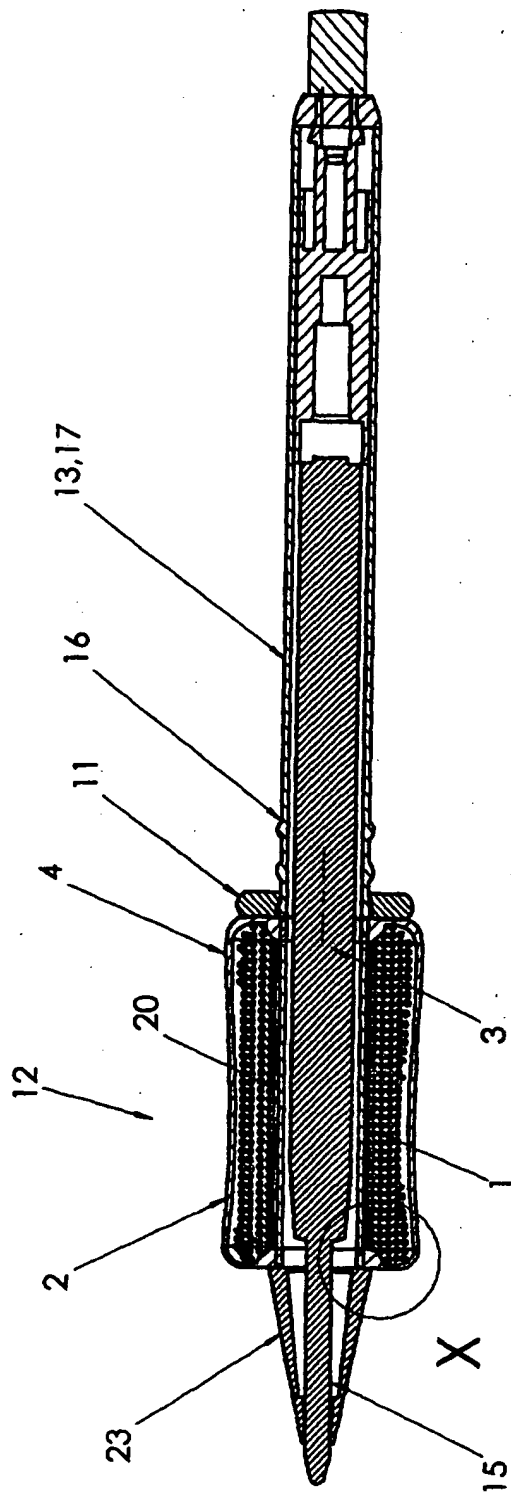


Fig. 2

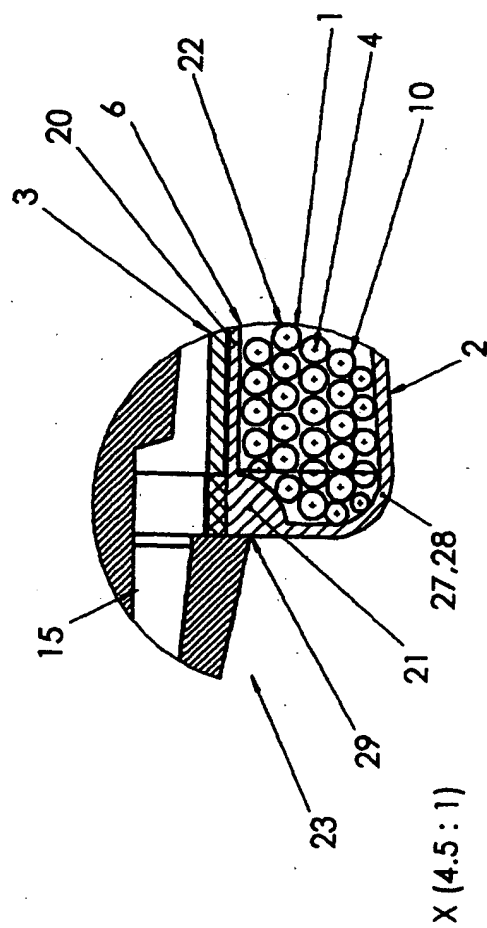


Fig. 3

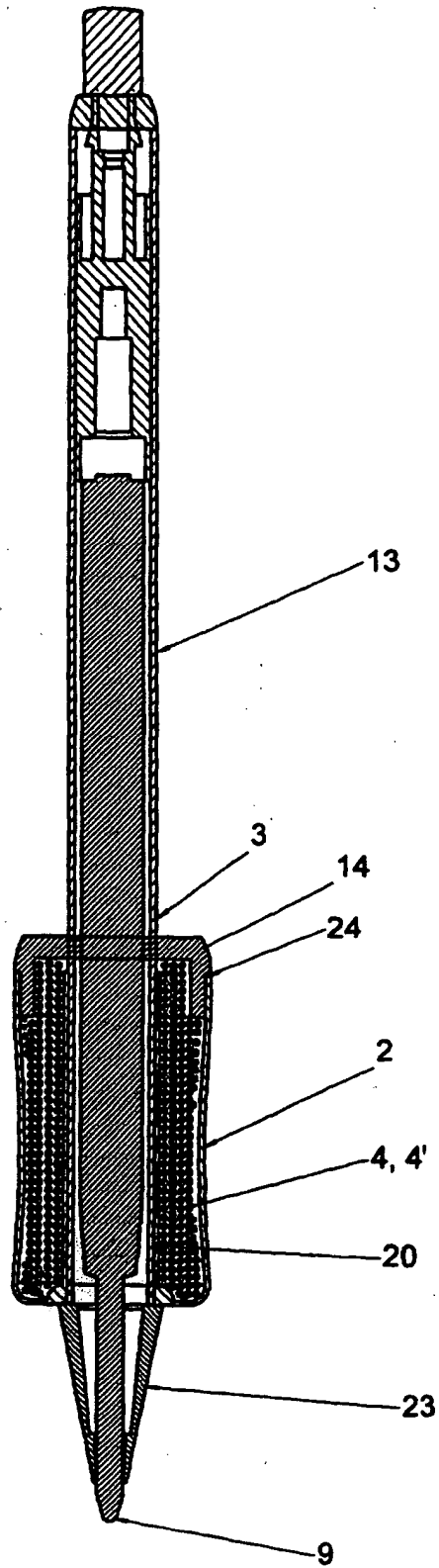


Fig. 4

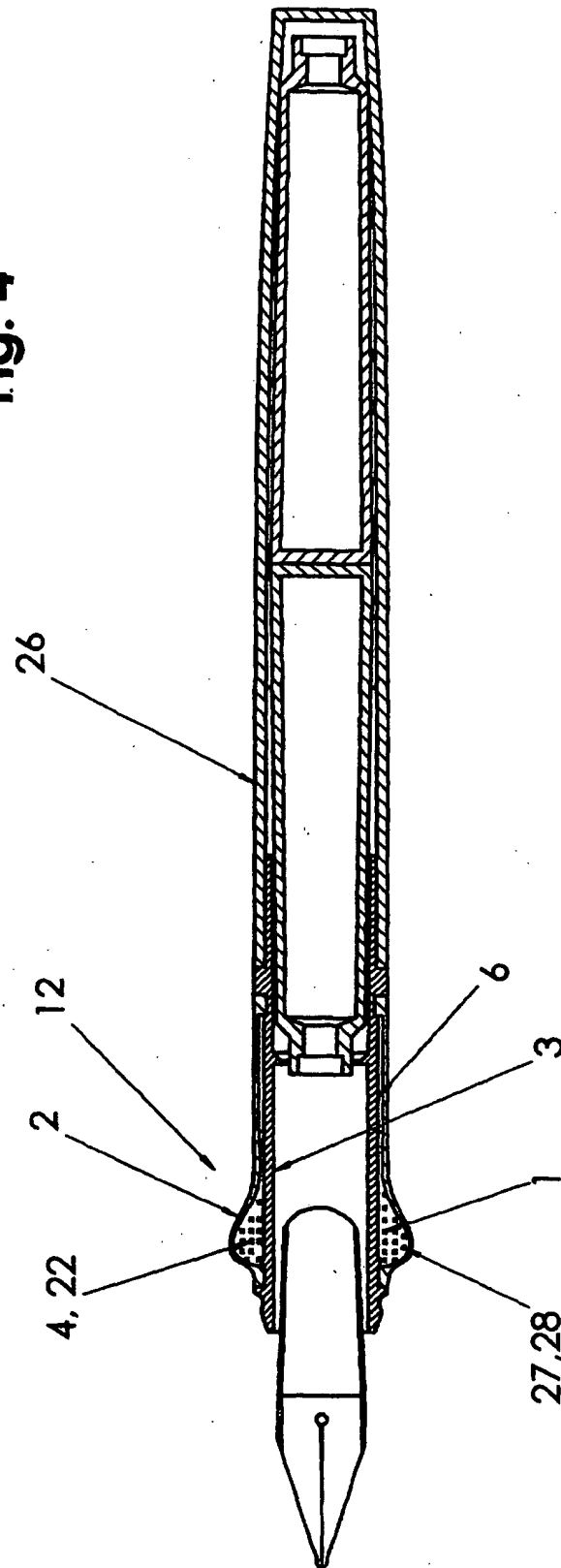


Fig. 5

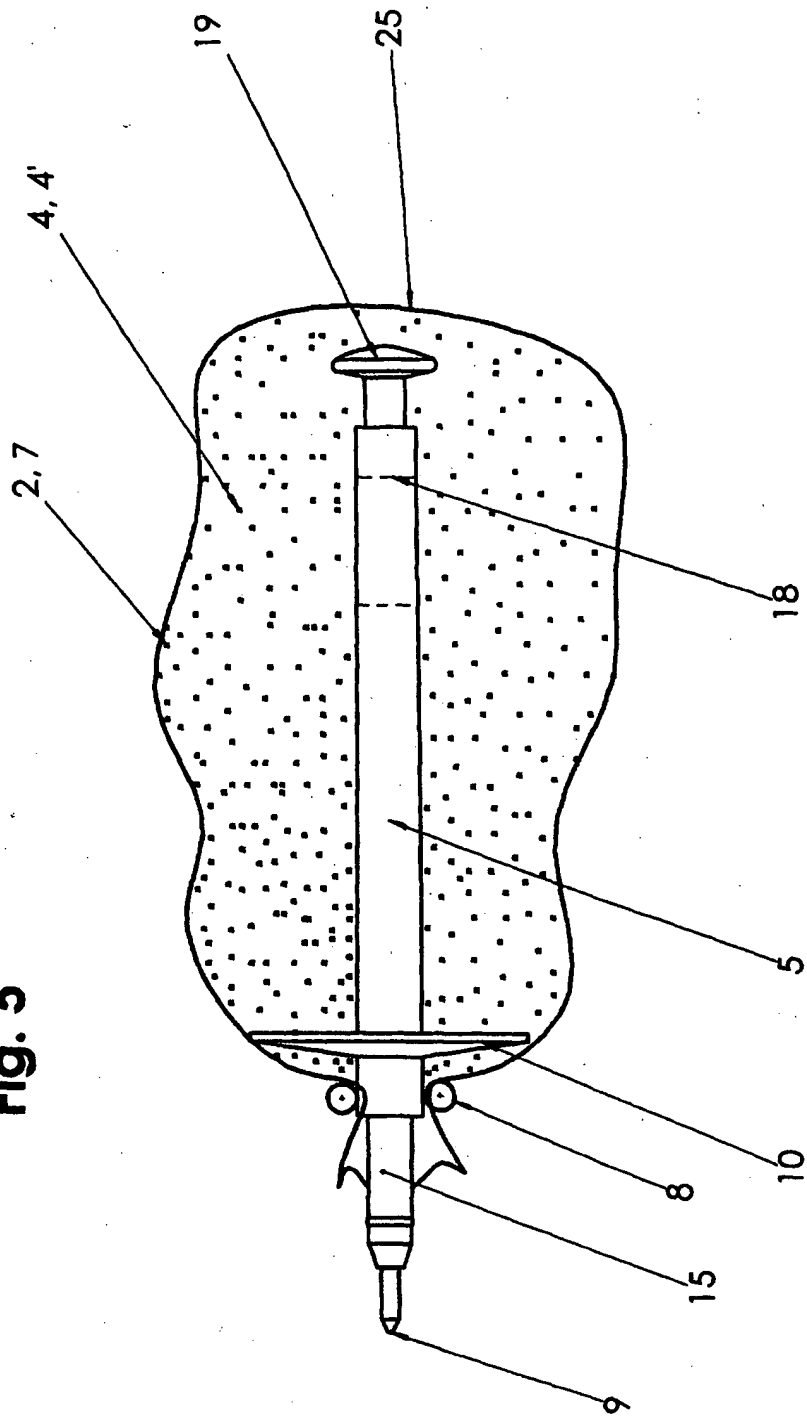


Fig. 6

